

A NEW AGONOXENINE MOTH FROM THE GALÁPAGOS ISLANDS
(GELECHIOIDEA: ELACHISTIDAE)

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ABSTRACT. The only member of the Elachistidae, Agonoxeninae so far encountered in the Galápagos Islands is described as a new species: *Haplochrois galapagosalis*, new species.

RESUMEN. Se describe la única especie de Elachistidae, Agonoxeninae de las islas Galápagos *Haplochrois galapagosalis*, sp. n.

Additional key words: Ecuador, South America, *Croton* sp., Euphorbiaceae.

The Agonoxeninae moths of the world are poorly known. Hodges (1997) reviewed the classification of their Neotropical members, and Sinev (1999) synonymized *Tetanocentria* Rebel (1902) with *Haplochrois* Meyrick (1897), the genus to which the only Galápagos agonoxenine species belongs. This is the first record of Agonoxeninae for the famous Ecuadorian archipelago.

The original description of *Haplochrois* (Meyrick 1897; type-species *H. chromatella* Meyrick 1897) is brief, but Bottimer (1926), Clarke (1965), and Riedl (1969) provide more information on adult and larval morphology of congeneric species. Based on Hodges (1983, 1997), Sinev (1999), and the new species recorded here, *Haplochrois* includes 30 described species distributed in tropical and subtropical regions of the world. The genus is diagnosed by characters of the male genitalia; i.e., the elongate and narrow tegumen and saccus, paired setose gnathos, and soft-lobed valvae (Sinev 1999). The available information on host plant comes from Kusnezov (1916), who described *H. theae* from larvae reared from the tea bush (*Camellia sinensis* (L.) O. Kuntze, Theaceae) in Transcaucasia, and from Bottimer (1926), who reported *H. bipunctella* (Chambers) larvae from leaf petiole galls and seeds of *Croton engelmannii* Ferguson (= *C. capitatus* Michaux, Euphorbiaceae) in Texas.

According to Hodges (1997), *Tetanocentria* (now *Haplochrois*) includes seven Neotropical species; six described by E. Meyrick and one by A. Busck. I examined the holotype (or a paratype in one case) of each of these species, as well as specimens of the North American species, *H. bipunctella*, to conclude that the Galápagos taxon is new.

***Haplochrois galapagosalis* B. Landry, new species**
(Figs. 1–9)

Diagnosis. The long and narrow forewing and hindwing, the up-turned labial palpus, the scaled haustellum, and the simple wing pattern will separate this species from all other Galápagos moths. Two species of Gracillariidae may appear somewhat similar in color and

size, but their forewing patterns are different and they don't have the haustellum scaled. *Pyroderces rileyi* (Walsingham), a Cosmopterigidae, also appears superficially similar to *H. galapagosalis*, but its forewing is mostly dark brown with an oblique paler line subterminally, and its antennae are annulate black and white (see Landry 2001).

Description. Male (n = 17). **Head** beige along median line with brown to dark-brown scales laterally. Haustellum beige. Labial palpus beige medially on segment II and at base and apex of segment III, brown laterally on segment II, dark brown on most of segment III. Antenna beige to dark brown, slightly paler on scape and first few flagellomeres; pecten made of about 25 long and thin scales; flagellomeres simple, with short setae and two sets of scales, the second erect. **Thorax** beige with three longitudinal dark-brown lines apically, or dark brown, but "greasy" in all specimens and consequently hard to characterize. **Foreleg** coxa dark brown with beige scales at base; femur dark brown, some specimens with scales bicolored beige basally and dark brown distally; tibia mostly dark brown with beige scaling at 1/3, 2/3, and terminally; tarsomeres I and II mostly dark brown with scales bicolored beige basally and dark brown distally, with beige spot subterminally; tarsomere III mostly beige, with dark-brown scales at base and apex; tarsomere IV dark brown; tarsomere V beige with dark brown at base. **Midleg** coxa and femur dark brown; tibia dark brown with scales bicolored beige basally and dark brown distally, darker brown toward apex, with short and thin projecting scales dorsally at base, middle, and apex; tarsomeres dark brown with scales bicolored beige basally and dark brown distally, with darker brown scales apically on tarsomeres I–IV. **Hindleg** coxa with a mixture of beige and brown to dark-brown scales; femur dark brown; tibia dark brown with scales bicolored beige basally and dark brown distally, with darker brown spots at base, middle, and apex, and with projecting long and thin pale-brown scales on entire dorsal margin and on ventral margin as a patch posterior to anterior pair of spurs; tarsomeres I–III with beige to dark-brown scales bicolored beige basally and dark brown distally, with darker brown scales apically; tarsomeres IV–V uniformly grayish brown; tarsomere I also with darker brown spot at middle and with patch of thin and long projecting scales dorsoapically; tarsomere II also with a few long and thin pale-brown scales projecting at apex dorsally. **Forewing** (Figs. 1, 2) length: 4–6 mm; ground color beige to dark grayish brown; pale specimens sometimes with slightly paler dorsal half and with most conspicuous dark-brown markings consisting of a small dot above middle subbasally, a short streak subbasally on cubital fold, a spot on cubital fold submedially (usually the most conspicuous, and sometimes only, marking), a smaller spot above end of cubital fold, some specimens with dark-brown scales dispersed between latter spot and costa, and three or four small subapical and apical spots on dorsal margin; fringe mostly dark brown at apex, pale brown to beige on dorsal margin. **Hindwing** uniformly grayish brown; fringe pale brown to beige. Frenulum simple. Retinaculum with frenulum hook. **Abdomen** usually appearing uniformly beige to beige brown, some specimens with brown scales laterally and ventrally, available specimens greasy and consequently difficult to characterize in color. **Male genitalia** (n = 5)



FIGS. 1-2. Adults of *Haplochrois galapagosalis*. 1. Female from Isabela (Volcan Darwin, 1000 m elev.). 2. Female from Isabela (± 15 km N Puerto Villamil).

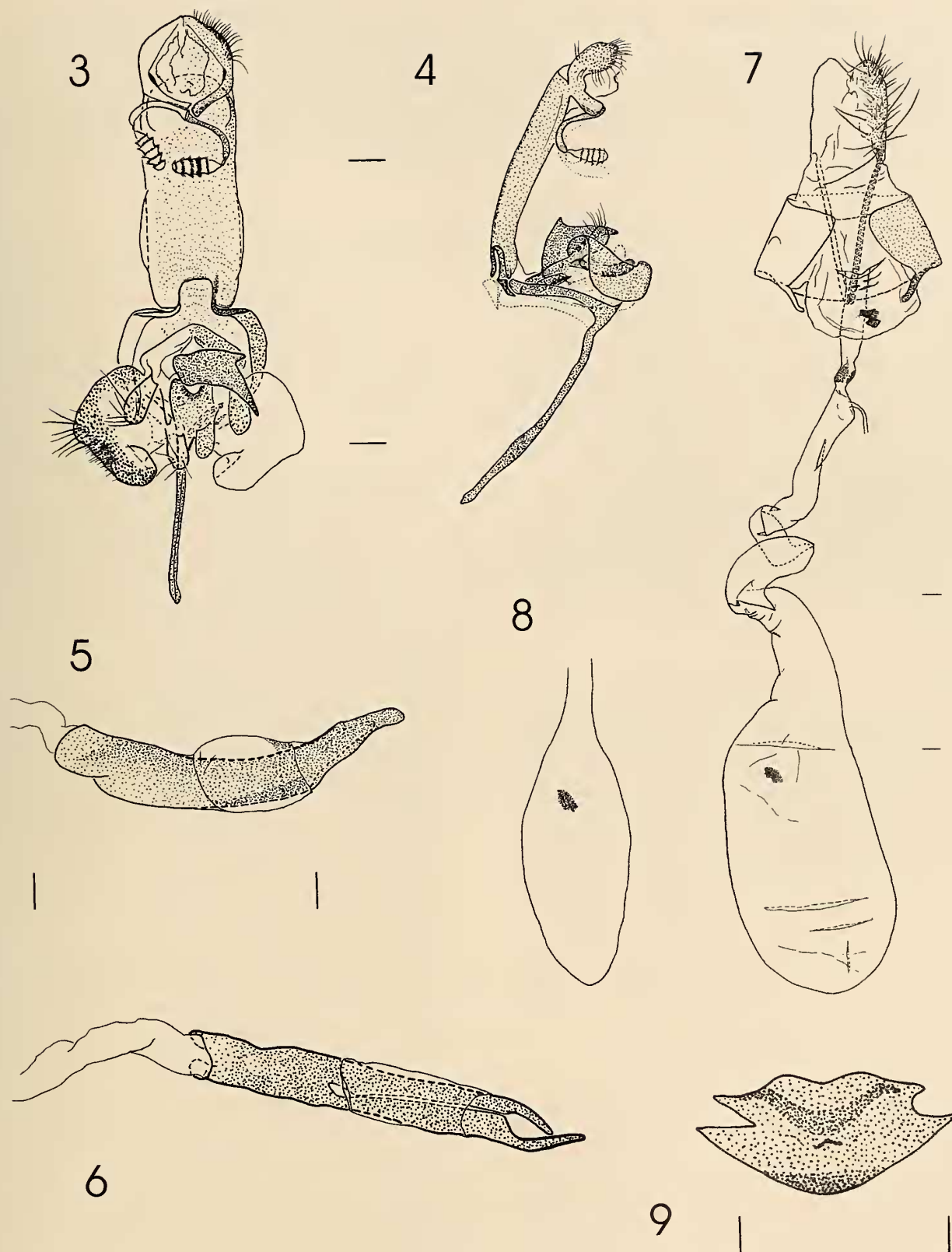
(Figs. 3-6). Uncus rounded, flattened dorsoventrally but bulged and shortly setose along apical and lateral margins, about 1/4th length of tegumen. Gnathos with thin arms broadly curved, constricted before apical elongate club bearing series of long, narrow, and curved spinules in five transverse rows forming incomplete rings, except for the most apical row. Tegumen rectangular, with parallel margins, elongate, fused dorsally and ventrally for most of length (basal arms very short), dorsal surface scaled, ventral surface spiculate, connecting with vinculum by an elongate and subtriangular projection originating dorsomedially on each short arm. Transtilla narrow, well sclerotized, straight, with lateral partially articulated setose knobs projecting posteriorly to apex of valva. Anellus forming a median, crescent-shaped, and crested structure projected posteriorly. Juxta narrow and poorly sclerotized, U-shaped to accommodate anellus, with a few setae ventrally, with two short and sparsely setose arms projecting posteroventrally. Valva short, flat, roughly semicircular, somewhat angular, curved backward, with minute setae on most of surface, dorsal and lateral margins with longer setae and long thin scales forming a lateral fan on undissected specimens. Vinculum very narrow, ventrally with long and thin saccus reaching middle of segment VII. Aedeagus of medium length, broadly curved in lateral view, apex directed dorsally, without coecum penis, distal half dorsally with longitudinal separation between two lateral halves, apically asymmetrical with only the lateral margins well sclerotized into narrow laterally flattened and apically rounded projections; the left projection longer, broader and coming out on the left side of the anellus; manica surrounding aedeagus at median third, with short sclerotized section apicodorsally; vesica without cornuti.

Female ($n = 30$). Forewing length: 5-7 mm. Antennal flagellomeres simple, without noticeable setae, with erect scales on last third of flagellum only. Frenulum with two acanthae. Retinaculum with evenly spaced thin scales on Sc+R₁ and Radial stem. **Female genitalia** ($n = 4$) (Figs. 7-9). Papillae anales laterally flattened, narrowing slightly toward rounded apex, with setae of medium length on lateral surface and very long setae around base; dorsal margin straight; ventral margin convex. Posterior apophyses narrow, straight,

reaching anterior margin of segment VIII. Segment VIII about as wide as preceding segment, unsclerotized medioventrally. Anterior apophyses short and narrow, directed medially at half right angle. Ostium bursae in fold in middle of ventral membranous section of segment VIII, without sclerotization. Middle of intersegmental membrane VII-VIII with two small subtriangular plates variable in width and degree of sclerotization between them. Ductus bursae long, narrow, slightly variable in width and length, coiled twice, with pair of very short sclerotized plates laterally at about 1/5th of length, posterior to inception of ductus seminalis. Corpus bursae elongate, about 1/3rd length of ductus bursae, without scobination, reaching apical margin of abdominal segment II; single small signum a very short inwardly directed spine on a small irregularly shaped plate.

Holotype δ (CNC # 22679): 1—"ECU[ADOR], GALAPAGOS/Santiago, Central/ 700 m elev[ation]., 9.iv.1992/ M[ercury] V[apor] L[amp], leg. B. Landry" [white, rectangular, printed in black ink]. 2—"HOLOTYPE/ Haplochrois/ galapagosalis B. Landry/ CNC #22679" [red, rectangular, hand written in black ink].

Paratypes: 16 δ , 30 δ ECUADOR, Galápagos, MVL, leg. B. Landry. **Floreana**: Las Cuevas, 23.iv.1992 (1 δ , slide BL 1254). Punta Cormoran, 21.iv.1992 (1 δ). **Genovesa**: Bahía Darwin, 10.iii.1992 (3 δ , slide BL 1256); 26.iii.1992 (1 δ , 1 δ). **Isabela**: Puerto Villamil (8.5 km N), 11.iii.1989 (1 δ); (ca. 15 km N), 25.v.1992 (2 δ , slide BL 1228). Tagus Cove, 13.v.1992 (1 δ , slide BL 1253). Volcán Darwin, 300 m elev., 15.v.1992 (1 δ); 630 m elev., 16.v.1992 (1 δ); 1000 m elev., 18.v.1992 (2 δ); 1240 m elev., 19.v.1992 (3 δ). **Marchena**: 12.iii.1992 (1 δ , 3 δ slide BL 1258); 23.iii.1992 (1 δ). **Pinta**: arid zone, 15.iii.1992 (1 δ , slide BL 1255); 200 m elev., 16.iii.1992 (1 δ); 400 m elev., 18.iii.1992 (1 δ , 2 δ). **San Cristóbal**: 4 km SE Puerto Baquerizo, 12.ii.1989 (1 δ , CNC slide MIC 4677). Base of Cerro Pelado, 22.ii.1989 (1 δ). **Santa Cruz**: Charles Darwin Research Station, arid zone, 19.i.1989 (1 δ , slide JFL 604). 4 km N Puerto Ayora, 20.i.1989 (1 δ). Los Gemelos, 31.i.1989 (1 δ); 27 May 1992 (1 δ). Tortuga Reserve (W Santa Rosa), 6.ii.1989 (4 δ , 1 δ). Finca S. Devine, 17.iii.1989 (1 δ); Finca Vilema (2 km W Bella Vista), 1.iv.1992 (1 δ). **Santiago**: Bahí Espumilla, 4.iv.1992 (1 δ slide



FIGS. 3-9. Genitalia of *Haplochrois galapagosalis*. 3-6. Males (scales = 0.5 mm). 3. Apical view, valvae flattened, aedeagus removed [slide BL 1257]. 4. Lateral view of whole genitalia except aedeagus [slide BL 1254]. 5. Aedeagus in lateral view [slide BL 1257]. 6. Aedeagus in dorsal view [slide 1254]. 7-9. Females. 7. Ventral view [from slides BL 1228, 1256, 1258] (scale = 0.5 mm). 8. Bursa in ventral view [slide BL 1228]. 9. Plates on membrane below ostium bursae [slide BL 1258] (scale = 0.0625 mm).

BL 1257, 1 ♀. 200 m elev., 5.iv.1992 (1 ♀). Aguacate, 520 m elev., 12.iv.1992 (1 ♂, 1 ♀).

The material collected in 1989 belongs to the Canadian National Collection of Insects, Ottawa, Ontario, Canada (CNC). The material collected in 1992 will be distributed among the Muséum d'histoire naturelle, Geneva, Switzerland (MHNG), The Natural History Museum, London, England (BMNH), the CNC (holotype), the Charles Darwin Research Station, Santa Cruz Island, Galápagos, Ecuador (ECCD), and the National Museum of Natural History, Washington, D.C., U.S.A. (USNM).

Remarks. The type locality, Central, is a campsite, and so is Aguacate on Santiago. The nomenclature used for the description of the male genitalia structures surrounding the aedeagus (the transtilla, anellus and juxta) is tentative. No recent or older species descriptions in this genus treat these structures in detail. Sinev (1999) mentions that the lobes of the gnathos bear setae, but I was not able to see any evidence of sockets and so I have called these projections spinules, in concordance with Hodges (1999). The two original specimens of one of Meyrick's species, *H. catholica*, are without abdomen and superficially similar to the Galápagos species. Resemblance in color pattern is common in *Haplochrois* and it is possible that the two taxa are conspecific. However, the type locality of *H. catholica* is Mallali, Guyana, where non endemic Galapagos species are not typically encountered, unless they have a broad Neotropical distribution.

Etymology. This species is named for the Ecuadorian archipelago where it was collected.

Distribution and biology. The species was found on the Galápagos Islands of Floreana, Genovesa, Isabela, Marchena, Pinta, San Cristóbal, Santa Cruz, and Santiago. I suspect that it may be distributed also on the other larger islands of the archipelago. Moths were collected between January 19 and May 25. They were attracted to light and found from sea level to 1240 m elevation on Volcán Darwin. The host plant is unknown.

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